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Does Board Ethnic Diversity Impact Board Monitoring Outcomes?

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This study investigates whether board ethnic diversity is associated with stronger board monitoring outcomes. We explore a range of outcomes – CEO compensation, accounting misstatements, CEO turnover–performance sensitivity and acquisition performance – but find no evidence to support this. We also find no evidence that board ethnic diversity improves overall firm performance, even for those firms with higher agency problems. Our results are robust across different methodologies and have important practical implications, by informing the current public policy debate on board ethnic diversity.

Introduction

Since the financial crisis of 2008 there has been an increased call for diversity on corporate boards, reflecting a frequently made claim that lack of diversity was partly to blame for the crisis. For example, the UK Corporate Governance Code states that:

> Essential to the effective functioning of any board is dialogue which is both constructive and challenging. The problems arising from 'group-think' have been exposed in particular as a result of the financial crisis. One of the ways in which constructive debate can be encouraged is through having sufficient diversity on the board. This includes, but is not limited to, gender and race. (Financial Reporting Council, 2016, p. 2)

The argument that gender and ethnic diversity will improve the key board role of oversight or monitoring of executive management has been made in many quarters. For example, the institutional investor TIAA-CREF invests on this basis, arguing that 'a diverse board is less likely to be beholden to management' (Carleton, Nelson and Weisbach, 1998, p. 1343), whilst board diversity proponents have argued that diverse directors are individually stronger monitors (e.g. Ramirez, 2004).

Board gender diversity has received by far the most attention from academia and policy-makers. Board gender quotas have been implemented in several countries and there is evidence that gender diversity results in stronger oversight (Larcker and Tayan, 2016). For example, female directors are more likely to sit on key monitoring committees, and are associated with lower director compensation, enhanced CEO turnover–performance sensitivity, improved performance for firms with agency problems (Adams and Ferreira, 2009), improved stock price informativeness (Gul, Srinidhi and Ng, 2011), better earnings quality (Gul, Srinidhi and Tsui, 2011) and the restraint of CEO overconfidence (Chen *et al.*, 2016).

In contrast to gender diversity, there is a paucity of such knowledge on racial and ethnic diversity. This is despite the importance to both firms and policy-makers. In their 2016 annual survey report, Spencer Stuart reported that 55% of respondents indicated that recruiting ethnic minority (henceforth in this paper *minority* refers specifically to *ethnic minority*) directors was a priority. Furthermore, in response to low ethnic board diversity in

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the UK, the Parker review (Parker, 2017) recommended that each FTSE 100 board should have at least one minority director by 2021. In this study we fill what we consider to be an important gap in the literature: an empirical examination of board ethnic diversity and the key board role of monitoring executive management.

From a theoretical perspective, the effect of ethnic diversity on monitoring could be positive, neutral or negative. Board monitoring may be stronger if ethnically diverse boards have more information and make better monitoring decisions, or if minority directors are stronger individual monitors due to higher independence (due to their ethnic difference) and higher director quality (due to discrimination). However, such differences may not hold in practice. Minority directors are typically selected after a very thorough vetting, and subsequently may be similar in terms of perspectives to Caucasians. Additionally, being in a minority may create pressure to conform and not behave differently. Thus, monitoring outcomes could be no different for ethnically diverse boards. Alternatively, differences could be such that they result in conflict and less efficient monitoring decisions.

A small number of empirical studies have examined the impact of board ethnic diversity on overall firm performance, the results of which are mixed (Larcker and Tayan, 2016). Carter, Simkins and Simpson (2003) find a positive relation between minority directors and Tobin's Q, as do Miller and Triana (2009) for profitability, yet Carter *et al.* (2010) find no association with either measure. Two other papers include ethnic diversity within a broader measure of board diversity, which is associated with positive firm performance outcomes. Anderson *et al.* (2011) examine race, gender, age, education and occupation together, whilst Erhardt, Werbel and Shrader (2003) consider minority and gender diversity together. These studies tell us little about board monitoring outcomes, since stronger monitoring could improve firm performance by reducing agency costs (Hermalin and Weisbach, 2003) or lower overall firm performance due to weaker board advising and greater managerial myopia (Adams and Ferreira, 2007; Faleye, Hoitash and Hoitash, 2011).

Further, firm performance outcomes may also reflect other (i.e. non-monitoring) effects of board ethnic diversity, such as the advisory role of the board (Adams, Hermalin and Weisbach, 2010) (i.e. more diverse viewpoints leading to better board decisions) or providing access to external resources (Pfeffer and Salancik, 1978) such as minority consumers and employees. Minority directors may provide advice about such groups, communicate with them and/or signal legitimacy to them. Miller and Triana (2009) show that ethnic diversity positively impacts firm performance via two mediating variables (innovation and reputation), suggesting an improvement in both these roles.

Monitoring strength may manifest itself in terms of board task outcomes and firm performance, the latter being positively moderated by agency costs. Our empirical approach examines each, ensuring that, as the first study to examine this issue, our conclusions are based on a wide range of potential impacts. Given that firm performance is noisy, determined by many factors and at best bears a distal relation to board diversity, we respond to observers' encouragement to examine more direct organizational outcomes (Adams *et al.*, 2015; Ferreira, 2010, 2015; Hillman, 2015; Nielsen and Huse, 2010; Zona and Zattoni, 2007).

Identifying causal impacts is likely confounded to some degree by endogeneity problems, associated with unobservable omitted variables and reverse causality (Abdallah, Goergen and O'Sullivan, 2015; Bettis *et al.*, 2014; Ferreira, 2010). The appointment of outside directors is endogenous to firm performance (Adams, Hermalin and Weisbach, 2010; Hermalin and Weisbach, 1988), and minority director appointments could be endogenously caused by firm characteristics which could be invariant or variant with time, observable or unobservable. With reverse causality, the presence of minority directors could be determined by past or expected firm performance and/or monitoring strength.[1]

In our setting there are no obvious quasi-natural experiments or shocks to facilitate causal inference. We instead employ firm fixed effects and instrumental variable analysis, each of which has limitations (Bettis *et al.*, 2014; Semadeni, Withers

[1] For example, underperforming firms, or firms with weak governance, may appoint minority directors (perhaps due to pressure to improve their governance). Alternatively, if firms appoint minority directors as tokens, they may do so only when they are performing (or expecting to perform) well and can thus afford to do so (Ferreira, 2010). Alternatively, CEOs could be rewarded with higher compensation for achieving diversity. Anecdotal evidence of this is provided by Broome, Conley and Krawiec (2011a, p. 798) and Barbaro (2004).

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and Trevis Certo, 2014).[2] However, since our key finding is consistent across all methods, we are reasonably confident of its robustness. We also address endogeneity by examining the theoretical mechanism that predicts cause and effect (Bettis *et al.*, 2014). Since stronger monitoring should create more value in firms with higher agency costs (Adams and Ferreira, 2007, 2009; Faleye, Hoitash and Hoitash, 2011), we examine whether the diversity performance relation is moderated by agency costs.

We make several contributions to the literature. First, within the board diversity literature, we provide the first evidence on board ethnic diversity and monitoring. We thus answer recent calls to consider aspects of board diversity beyond gender (Adams *et al.*, 2015; Hillman, 2015). Since the literature shows gender diversity to be associated with stronger monitoring (Adams and Ferreira, 2009), it is important to examine whether the finding also holds for ethnic diversity. Second, we add to a recent stream of research showing that outside director characteristics matter for the strength of monitoring, advisory benefits and firm performance.[3] Third, we increase our understanding of ethnic diversity within the highest leadership ranks of corporations, an area which is under-researched despite the importance to firms and policy-makers (Guest, 2016, 2017; Hill, Upadhyay and Beekun, 2014). More broadly, we contribute to the literature on minority participation in the US workforce, which, despite being considered a key organizational issue of our time (Richard, 2000), remains under-researched (Richard, Murthi and Ismail, 2007).

The paper proceeds as follows. In the next section we review the potential impacts of board ethnicity on board monitoring and present our hypotheses. In the third section, we report our results and analysis. In the final section, we discuss our findings, their limitations and make suggestions for future research.

Theoretical framework and hypothesis development

In this section, we discuss the potential impacts of ethnic diversity on board monitoring, stratifying theories into those predicting a positive, neutral or negative effect. These effects are summarized in Table 1.

Positive effects of board ethnic diversity on monitoring

The argument that ethnic diversity will positively impact role oversight is motivated along several lines. First, minority directors may possess different sensitivities and behavioural traits from Caucasia directors, due to different socialization experiences. They are more likely to have experienced discrimination, and thus have a keener sensitivity towards unfairness. This could manifest itself in stronger objection to agency problems which benefit management at the expense of other stakeholders, such as excessive CEO pay,[4] accounting misreporting, CEOs not being replaced despite underperformance, and wealth-destroying mergers and acquisitions. Second, the literature on intergroup relations shows a tendency for group categorization based on ethnicity (Tajfel and Turner, 1986). Compared with Caucasians, minority directors may have less allegiance towards 'out-group' Caucasian CEOs. Consistent with this, Broome, Conley and Krawiec (2011b) provide evidence that minority directors have weaker social relations with Caucasian executives. Additionally, minority directors are often recruited from outside the executive ranks, and are thus more independent of the 'old boys club' (Hillman, Cannella and Harris, 2002; Zweigenhaft and Domhoff, 2008). Third, ethnic minority directors may work relatively hard to show that they deserve their position rather than being appointed due to affirmative action or an implicit quota. Fourth, to be appointed directors despite discrimination, ethnic minorities

[2] Both Carter, Simkins and Simpson (2003) and Miller and Triana (2009) employ cross-sectional data, which does not facilitate causal inference. Carter *et al.* (2010) control for the possibility that past performance influences board diversity, but not future performance.

[3] Studies have also illustrated the importance of nationality (Frijns, Dodd and Cimerova, 2016; Masulis, Wang and Xie, 2012), financial expertise (Guner, Malmendier and Tate, 2008), political experience (Agrawal and Knoeber, 2001; Goldman, Rocholl and So, 2009) and occupation [CEOs (Fahlenbrach, Low and Stulz, 2010), bankers (Dittman, Maug and Scheider, 2010), academics (Francis, Hasan and Wu, 2015; White *et al.*, 2014) and former CEOs (Fahlenbrach, Minton and Pan, 2011)].

[4] Krawiec, Conley and Broome (2013) provide anecdotal evidence of a minority director being the only director objecting to an executive pay package on such grounds.

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Table 1. Potential impacts of board ethnic diversity on board monitoring

Level	Theory	Result	Effect on monitoring
Board	Group diversity	Better board decisions	Positive
Director	Out-group	More independent	Positive
Director	Discrimination	Higher director quality	Positive
Board	Selection bias (ethnics same as Caucasians)	Board decisions no different	Neutral
Director	Selection bias (ethnics same as Caucasians)	Director behaviour no different	Neutral
Director	Tokenism	Director behaviour no different	Neutral
Board	Group diversity	Conflict	Negative
Director	Implicit quota	Lower director quality	Negative
Director	Ethnic-specific role	Not focused on monitoring	Negative

may need to have particularly high qualities and thus be more capable.[5]

Board ethnicity may also contribute to more general benefits of diversity. Decision-making groups that are made up of individuals with diverse human capital, attitudes, cognitive functions and beliefs are more likely to have a wider breadth of information available to them and to incur cognitive conflict (Watson, Kumar and Michaelsen, 1993). They are thus more likely to consider a wider range of solutions, have more challenging discussions and generate more innovative ideas and higher-quality solutions (Hillman, Cannella and Harris, 2002). Ethnicity is an important demographic variable which is associated with such diverse characteristics (Robinson and Dechant, 1997), and thus ethnic diversity may reap such benefits (Cox, Lobel and McLeod, 1991). If these differences hold at the director level, then board ethnic diversity may lead to better board decision-making and thus better monitoring decisions (Milliken and Martins, 1996). Additionally, the increase in potential solutions may enable outside directors to more openly express their thoughts, and be less likely to be influenced by management and suffer from 'groupthink' (Coles, Daniel and Naveen, 2015).

Neutral effects of board ethnic diversity on monitoring

Selection issues may weaken the above monitoring benefits of ethnic diversity. Minority directors are a highly select group, whose perspective and experience could be closer to those of Caucasian directors than in the population at large. For minority directors with executive experience, this is especially so. Research shows that female executives are not representative of the female population in terms of values and risk profiles (Adams and Funk, 2012; Adams and Ragunathan, 2015). Even minority directors without executive experience may still be in the 'old boys club' if they come from an elite background (i.e. Ivy League college), which is necessary to enter the tightknit director network. Minority directors are typically selected after a thorough vetting to ensure they will 'fit in' (Broome, Conley and Krawiec, 2011a).

Additionally, the theory of tokenism (Kanter, 1977) points towards a neutral effect on board outcomes. Where an out-group member is in a numerical minority, as minority outside directors on boards almost always are, they could be subject to heightened visibility. This could result in pressure to not outperform Caucasian directors or to censor their opinions if conflicting, and thus a reluctance to take a relatively tough stance in monitoring situations.

Negative effects of board ethnic diversity on monitoring

The diverse backgrounds of minority directors may result in conflict or less trust with Caucasian directors. Either may limit group communication and cohesiveness, lowering board effectiveness and the monitoring function (Ferreira, 2010). The majority group (Caucasians) may exclude minorities from information-sharing activities, limiting minority directors' ability to be strong monitors.

[5]Consistent with this, Hillman, Cannella and Harris (2002) find that minority directors are more likely to hold advanced degrees, although they are less likely to come from a business background.

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Such conflict could negate either the group monitoring benefits or the ability of individual minority directors to be stronger monitors on an individual basis.

If minority directors are appointed predominantly for their minority status and the supply of qualified minority candidates is insufficient, then those selected may be of lower quality and underperform their monitoring function (Ferreira, 2010). Carleton, Nelson and Weisbach (1998) provide evidence of one firm resisting institutional shareholder pressure to appoint a minority director on the grounds that the best qualified director may not be a minority or female.

Finally, minority directors may play a specific role related to their minority status and consequently regard monitoring as secondary (Ferreira, 2010). For example, minority directors may provide counsel about, communicate with and provide legitimacy to stakeholders such as minority consumers, minority employees and the government (since government suppliers must meet procurement targets on diversity).[6]

Hypotheses

The preceding section makes clear that the relation between ethnic diversity and board monitoring is an empirical question. Our first hypothesis is that:

> *H1:* Ethnic board diversity strengthens board monitoring outcomes

We examine several different monitoring outcomes. First, stronger monitoring should be associated with lower CEO compensation and a higher fraction of CEO pay in equity incentives. Second, stronger monitoring should be associated with a stronger sensitivity of CEO turnover to firm performance (Adams and Ferreira, 2009; Hermalin and Weisbach, 1988; Masulis, Wang and Xie, 2012). Third, ensuring the integrity of financial statements is a critical monitoring function for outside directors (Francis, Hasan and Wu, 2015; Masulis, Wang, and Xie, 2012) and thus stronger monitoring should be associated with a lower likelihood of accounting misstatements. Finally, mergers and acquisitions (M&As) are an appropriate event to examine for director monitoring, since they often destroy value and are arguably motivated by managerial rather than shareholder gain (e.g. Masulis, Wang and Xie, 2007). Stronger monitoring should therefore be associated with higher M&A performance.

Stronger monitoring is expected to result in higher firm performance in poorly governed firms with high agency costs (Adams and Ferreira, 2007, 2009; Faleye, Hoitash and Hoitash, 2011). Thus, if ethnic diversity is associated with stronger monitoring, the ethnic diversity–firm performance relation should be positively moderated by governance strength. Our second hypothesis is as follows:

> *H2:* The relation between ethnic board diversity and firm performance is positively moderated by agency costs

Our measures of firm performance are firm profitability and value, proxied by Tobin's Q. In addition, we examine the stock price reaction to the announcement of minority outside director appointments to measure how the stock market evaluates their contribution to firm value (e.g. Fahlenbrach, Low and Stulz, 2010; Masulis, Wang and Xie, 2012; White *et al.*, 2014).

Data and methodology

Sample

We employ a US setting due to the relatively high level of board ethnic diversity, data availability and the relatively strong monitoring role played by US boards, which should facilitate the detection of a stronger monitoring role played by ethnic minorities if it exists. Board minority representation is 8.5% in the USA (sample estimate), compared with 3.4% in Canada (Mcfarland, 2013), 1.8% in the UK (Parker, 2017) and lower for mainland Europe (Foroohar, 2002).

Our sample of firms and outside directors is drawn from the Investor Responsibility Research Center (IRRC) database, which reports race and ethnicity for S&P 1500 firm directors as either Caucasian, African American, Asian, Hispanic or Native American. We identify errors in the IRRC's classification of minority directors, and therefore clean the data and manually check all directors classified as a minority by the IRRC. The process employed is described in Appendix A.

[6]Many of these potential neutral and negative outcomes reflect other underlying causes (e.g. prejudice, stereotyping, selection problems) rather than diversity per se.

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We require that ethnic classification is available for all directors for a given firm year and that the firm is available on the Compustat and Center for Research in Security Prices (CRSP) databases. Our final sample comprises 1,906 unique firms and 11,916 firm year observations over 1996–2011. In the sample, 6,690 firm years have at least one minority outside director, whilst 2,648 have more than one. Our sample contains 14,947 unique outside directors, comprising 13,619 Caucasians and 1,328 minorities (633 African Americans, 395 Asians and 300 Hispanics). Our sample is much larger and covers a much longer time frame than prior studies.[7]

Empirical modelling

Our analysis at the firm level involves two dichotomous outcomes (CEO turnover and accounting misstatements), for which we employ a logit model. For other firm-level outcomes (CEO compensation, acquisition performance, firm performance and director appointment returns) we use ordinary least squares (OLS). Following the main analysis, we report additional results that check the robustness of our models to problems of omitted variables and endogeneity bias.

Dependent variables

A detailed description of all variables is provided in Appendix B. Data on compensation is from ExecuComp. CEO compensation is the natural logarithm of CEO total annual compensation in thousands of 2011 US dollars. CEO incentive pay is the annual value of restricted stock and option grants scaled by total annual compensation.

Our first measure of CEO turnover is from ExecuComp, and is a dummy variable set equal to one if the CEO leaves in the next fiscal year (excluding cases described as 'deceased'), zero otherwise. Unforced turnover (i.e. retirements and resignations due to personal reasons) may account for a large proportion of CEO turnover (Jenter and Kanaan, 2015) and do not reflect board monitoring. Forced turnover is a dummy variable set equal to one if the CEO is forced out of post in the next fiscal year, zero otherwise. We employ the dataset of Peters and Wagner (2014) and Jenter and Kanaan (2015) for 1996–2010.[8]

Data on financial misstatements is from the Security and Exchange Commission's (SEC's) Accounting and Auditing Enforcement Releases, as compiled by the University of California-Berkeley's Center for Financial Reporting and Management (CFRM).[9] The CFRM data contains CIK codes, firm names and misstatement fiscal years, which we match with sample firm years. Our dependent variable is accounting misstatement, a dummy variable set equal to one for these firm years, zero otherwise.

We identify sample firm M&As using the Securities Data Corporation (SDC) database. We require that each deal is completed, that the value is disclosed and greater than $1m, and that the acquirer controls less than 50% of target shares prior to and 100% after the deal. Financial (governance) data must be available for the last financial year (annual meeting) prior to announcement. Our dependent variable is M&A returns, measured using cumulative abnormal returns (CAR) and the market model over a 3-day window (−1, 1), where day 0 is the announcement date.

We measure firm performance using profitability and Tobin's Q. Data is from Compustat. Of the 97,154 outside director firm years, 7,186 are identified as appointment years. We collect appointment announcement dates from BoardEx (available from 2003), and require that daily share price data is available on the CRSP database. This results in 4,273 sample appointment years, 2,940 (69%) of which we match with BoardEx announcement dates,[10] of which 390 are minority appointments. Our dependent variable is the market model CAR estimated over a 3-day event window (−1, 1).

Independent variables

Our key independent variable for the firm-level analysis is the number of minority outside directors divided by total outside directors (fraction minority). We restrict our analysis to minority outside directors, since minority inside directors are

[7] In contrast, Carter, Simkins and Simpson (2003) examine 638 firms over one year, whilst Carter *et al.* (2010) examine 950 firm years (314 firms over 5 years).

[8] We are grateful to Dirk Jenter, Fadi Kanaan, Florian Peters and Alexander Wagner for making their data available.

[9] This database is described in Dechow *et al.* (2011).

[10] Comparable with Fahlenbrach, Low and Stulz (2010), who find announcement dates for 63.5% of their sample.

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not expected to play a monitoring role and are relatively low in number.

For the determination of CEO compensation, membership of the compensation committee is likely to be important. Fraction minority on compensation committee is defined as the proportion of minority outside directors on the compensation committee. Similarly, given the importance of the audit committee in monitoring firm financial statement integrity (Masulis, Wang and Xie, 2012), we examine whether the proportion of minority outside directors on the audit committee (fraction minority on audit committee) is related to misstatement likelihood. Data is from IRRC for both variables.

For CEO turnover, our measure of performance is the firm's stock return for the fiscal year. To assess whether minority directors impact the relation between turnover and performance, we interact this stock return variable with the fraction minority variable. Stock return data is from CRSP.

For the director appointment returns analysis, minority is a dummy variable set equal to one if the director is either African American, Asian or Hispanic, zero otherwise.

Moderating variable

As a proxy for firm governance strength, we use the entrenchment index (E-index) of Bebchuk, Cohen and Ferrell (2009). This is the sum of six provisions (staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, supermajority requirements for mergers, charter amendments) found to be most relevant for firm performance of the 24 considered by Gompers, Ishii and Metrick (2003). A higher value indicates higher insulation from takeover and hence weaker governance. We create this index using the GMI database.

Control variables

We employ standard control variables. Firm-level controls include the fraction of female directors, board size, fraction of independent directors, firm size, number of business segments, volatility, profitability and Tobin's Q. CEO controls include tenure, age and whether the CEO is chairman. Deal controls for the M&A returns model include relative size, whether the acquisition is diversifying, cash-financed, stock-financed, hostile, cross-border, whether there is a competing bidder and whether the target is publicly listed. Director controls for the appointment returns model include director independence, gender, age, number of other directorships held, foreign, retired and if not retired, whether working as an executive or in finance, consulting, academia, legal or non-profit sectors.[11] We include year and industry dummies (two-digit SIC) in all models. To reduce the influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles.

Table 2 reports descriptive statistics on board, firm, M&As and director appointment characteristics. There are 896 CEO turnover events, an unconditional turnover likelihood of 11%. Forced CEO turnover is much less frequent, occurring in 1% of sample firm years. There are 136 sample firm year financial misstatements. The E-index is not available in every sample year, and thus our moderating tests employ a smaller subsample. The variable ranges from zero to six, with an average of two. Our M&A sample consists of 2,322 deals.

Results and analysis

Monitoring outcomes

Table 3 reports regression results for board monitoring outcomes. Model 1 reports the determinants of CEO total compensation. The coefficient for fraction minority is a statistically significant 0.315. This implies that increasing the proportion of minority directors by 0.1 [representing one standard deviation in fraction minority or the addition of almost one (0.85) minority director] increases compensation by 3.15% and is thus of small economic magnitude. Model 2 reports that the coefficient for fraction minority on compensation committee is 0.125, implying that a committee made up fully of minorities would be associated with 12.5% higher CEO compensation. However, this coefficient is statistically insignificant.

Model 3 reports the determinants of CEO incentive pay, for which there is a positive but small and

[11] Additional analysis shows that minority outside directors are more likely than Caucasian outside directors to be independent (93–88%), female (24–13%) and foreign (6–3%), but less likely to be retired (16–27%) or current executives (37–42%). Additionally, minority outside directors are on average younger (58–62 years), of lower tenure (6.3–8.6 years), but hold a greater number of directorships (1.38–1.06).

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Table 2. Descriptive statistics

	Obs.	Mean	Median	Std. dev.	Min	Max
Panel A: Board characteristics						
Fraction minority	11,916	0.10	0.10	0.11	0.00	1.00
Fraction minority on compensation committee	11,337	0.08	0.00	0.13	0.00	1.00
Fraction minority on audit committee	11,337	0.09	0.00	0.13	0.00	1.00
Fraction female	11,916	0.12	0.11	0.09	0.00	0.60
Board size	11,916	9.78	10.00	2.61	4.00	30.00
Fraction independent	11,916	0.73	0.77	0.15	0.00	1.00
CEO tenure	7,827	8.57	7.00	7.31	0.00	59.00
CEO-chairman	8,278	0.72	1.00	0.45	0.00	1.00
CEO age	8,031	56.84	57.00	7.00	32.00	94.00
CEO compensation*	8,256	8.32	8.34	1.01	5.59	10.62
CEO incentive pay	8,220	0.59	0.66	0.27	0.00	0.97
CEO turnover	8,278	0.11	0.00	0.31	0.00	1.00
CEO forced turnover	8,237	0.01	0.00	0.11	0.00	1.00
Panel B: Firm characteristics						
Firm size	11,912	7.92	7.84	1.48	4.29	11.21
Profitability	11,911	0.05	0.05	0.07	−0.34	0.24
Tobin's Q	11,902	1.87	1.47	1.168	0.81	8.260
# Business segments	11,916	1.76	1.00	1.19	1.00	10.00
Volatility	11,830	10.33	9.07	5.53	3.02	34.89
E-index	4,980	3.07	3.00	1.50	0.00	6.00
Stock performance	11,796	0.15	0.11	0.44	−0.74	2.06
Accounting misstatement	11,916	0.01	0.00	0.11	0.00	1.00
Fraction HQ minority	11,831	0.34	0.33	0.20	0.00	0.97
Panel C: Merger and acquisition characteristics						
M&A returns	2,322	0.00	0.00	0.05	−0.20	0.30
Diversifying	2,322	0.45	0.00	0.50	0.00	1.00
Public target	2,322	0.24	0.00	0.43	0.00	1.00
All-cash	2,322	0.40	0.00	0.49	0.00	1.00
All-stock	2,322	0.10	0.00	0.30	0.00	1.00
Hostile	2,322	0.01	0.00	0.07	0.00	1.00
Competing	2,322	0.01	0.00	0.09	0.00	1.00
Cross-border	2,322	0.22	0.00	0.41	0.00	1.00
Relative size	2,322	0.11	0.03	0.24	0.00	3.83
Panel D: Director appointment characteristics						
Appointment returns	2,397	0.00	0.00	0.03	−0.10	0.13
Minority	2,397	0.14	0.00	0.35	0.00	1.00
Independent	2,397	0.95	1.00	0.21	0.00	1.00
Female	2,397	0.18	0.00	0.38	0.00	1.00
Age	2,397	57.06	58.00	7.25	29.00	80.00
# Other directorships	2,397	0.91	1.00	1.06	0.00	7.00
Foreign	2,397	0.05	0.00	0.22	0.00	1.00
Retired	2,397	0.17	0.00	0.38	0.00	1.00
Executive	2,397	0.35	0.00	0.48	0.00	1.00
Finance	2,397	0.16	0.00	0.37	0.00	1.00
Consulting	2,397	0.09	0.00	0.28	0.00	1.00
Academic	2,397	0.07	0.00	0.26	0.00	1.00
Legal	2,397	0.02	0.00	0.15	0.00	1.00
Non-profit	2,397	0.01	0.00	0.11	0.00	1.00
Other	2,397	0.11	0.00	0.32	0.00	1.00

The data in Panels A and B is panel data for an unbalanced sample of 1,906 firms for 1996–2011. Not all firms have data for all years. The data in Panel C is for 2,322 acquisitions completed by this sample of firms for 1996–2011. The data in Panel D is for 2,397 director appointments associated with this sample of firms for 2003–2011.

* CEO compensation in USD: 6,643.0 (mean), 4,206.5 (median), 7,319.8 (std. dev), 266.82 (min) and 40,798.2 (max).

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Table 3. Regressions of monitoring outcomes on board ethnic diversity

Dependent variable	CEO compensation (1)	CEO compensation (2)	CEO incentive pay (3)	CEO incentive pay (4)	Accounting misstatement (5)	Accounting misstatement (6)	CEO turnover (7)	CEO forced turnover (8)	M&A returns (9)
Fraction minority	0.315**		0.047		−0.456		−0.245	−2.619	−0.002
	(0.142)		(0.043)		(1.187)		(0.487)	(1.950)	(0.011)
Fraction minority on compensation committee		0.125		0.014					
		(0.126)		(0.035)					
Fraction minority on audit committee						−0.505			
						(1.026)			
Fraction minority * Stock performance							0.951	2.814	
							(0.868)	(3.112)	
Stock performance							−0.394***	−1.643***	
							(0.143)	(0.537)	
Fraction female	−0.523***	−0.472***	−0.100**	−0.100**	−2.925	−3.303	0.304	0.182	−0.005
	(0.163)	(0.162)	(0.044)	(0.044)	(2.386)	(2.596)	(0.488)	(1.601)	(0.015)
Board size	0.025***	0.025***	0.005**	0.006**	0.089*	0.079	0.052**	0.019	0.000
	(0.008)	(0.008)	(0.002)	(0.002)	(0.050)	(0.050)	(0.020)	(0.053)	(0.001)
Fraction independent	0.557***	0.637***	0.163***	0.179***	−3.439***	−3.441***	−0.477	1.689	−0.009
	(0.115)	(0.118)	(0.034)	(0.034)	(0.939)	(0.980)	(0.334)	(1.118)	(0.010)
Firm size	0.413***	0.416***	0.050***	0.050***	0.797***	0.776***	0.128***	0.201*	−0.001
	(0.020)	(0.021)	(0.005)	(0.005)	(0.151)	(0.151)	(0.039)	(0.115)	(0.001)
# Business segments	−0.008	−0.006	−0.006*	−0.007*	−0.094	−0.067	−0.036	0.123	0.001
	(0.015)	(0.016)	(0.003)	(0.004)	(0.128)	(0.127)	(0.034)	(0.088)	(0.001)
Profitability	−0.046	−0.110	−0.171**	−0.175**	−3.398*	−4.071**			0.026
	(0.297)	(0.315)	(0.077)	(0.081)	(1.891)	(1.988)			(0.025)
Tobin's Q	0.095***	0.098***	0.030***	0.031***	−0.009	−0.050			−0.001
	(0.024)	(0.025)	(0.005)	(0.005)	(0.169)	(0.177)			(0.001)
Volatility	−0.001	−0.002	0.000	0.000	−0.041	−0.040	0.025***	0.093***	0.000
	(0.003)	(0.003)	(0.001)	(0.001)	(0.030)	(0.030)	(0.009)	(0.024)	(0.000)
CEO tenure	−0.004	−0.004	−0.003***	−0.003***			−0.027***	−0.032	0.000*
	(0.003)	(0.003)	(0.001)	(0.001)			(0.006)	(0.024)	(0.000)
CEO-chairman	0.174***	0.173***	0.025**	0.024**			0.036	−0.273	0.000
	(0.038)	(0.040)	(0.010)	(0.011)			(0.105)	(0.276)	(0.003)
CEO age	−0.001	−0.001	−0.003***	−0.003***			0.102***	−0.009	0.000
	(0.003)	(0.003)	(0.001)	(0.001)			(0.009)	(0.020)	(0.000)
Diversifying									−0.007***
									(0.002)

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Table 3. Continued

Dependent variable	CEO compensation (1)	CEO compensation (2)	CEO incentive pay (3)	CEO incentive pay (4)	Accounting misstatement (5)	Accounting misstatement (6)	CEO turnover (7)	CEO forced turnover (8)	M&A returns (9)
Public target									−0.014***
									(0.003)
All-cash									0.004*
									(0.002)
All-stock									−0.015***
									(0.005)
Hostile									−0.006
									(0.016)
Competing									−0.004
									(0.014)
Cross-border									0.001
									(0.003)
Relative size									−0.021***
									(0.008)
Model	OLS	OLS	OLS	OLS	Logit	Logit	Logit	Logit	OLS
N	6,962	6,399	6,936	6,373	6,715	6,131	7,493	5,295	2,322
Adjusted R^2	0.5149	0.5139	0.3064	0.2954	0.2656	0.2691	0.0841	0.0937	0.0986

Models (1)–(4) and (9) are estimated using OLS, whilst models (5)–(8) are estimated using a logit model. All models include industry dummies (two-digit SIC) and year dummies. For models (1)–(8), year dummies are based on financial year ends while for model (9), year dummies are based on announcement year. For models (1)–(6), firm variables and CEO characteristics are measured at the current financial year end, while board variables are measured at the annual shareholders meeting that occurs within the current financial year. For models (7) and (8), firm variables and CEO characteristics are measured at the current financial year end, while board variables are measured at the annual shareholders meeting occurring within the next current financial year. For model (9), board variables are measured at the annual meeting date prior to the acquisition announcement, and firm variables at the financial year end prior to the acquisition announcement. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustering at the firm level.
*, **, *** Significance at the 90%, 95%, 99% level of confidence, respectively.

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insignificant association with the proportion of minority outside directors. The coefficient of 0.047 implies that increasing the proportion of minority directors by 0.1 increases the fraction of incentive pay by just 0.005. A similar small and weak association holds for the proportion of minority outside directors on the compensation committee (model 4). In this case the statistically insignificant coefficient of 0.014 implies that increasing the proportion by one-third increases the fraction of CEO incentive pay by an economically insignificant 0.005. We thus find no evidence that ethnic minority directors strengthen board monitoring of executive compensation.

Model 5 reports logit regression results on the likelihood of accounting misstatements. The coefficient on fraction minority is a negative but statistically insignificant −0.456, implying that an increase of 0.1 in fraction minority decreases the likelihood of a misstatement by 3.7%. Model 6 reports similar results for the effect of fraction minority on audit committee, for which the coefficient is a statistically insignificant −0.505. We thus find no evidence that board ethnic diversity significantly reduces the likelihood of accounting irregularities. Regarding controls, misstatement likelihood is negatively correlated with the proportion of independent directors and profitability, whilst it is positively correlated with size, consistent with Masulis, Wang and Xie (2012).

Model 7 reports logit regression results for CEO turnover. Consistent with prior findings (Adams and Ferreira, 2009; Masulis, Wang and Xie, 2012), turnover is decreasing in firm stock performance, indicating that underperforming CEOs are more likely to be replaced. The coefficient of −0.39 is statistically significant at the 1% level. The coefficient on the interaction between fraction minority and stock performance is 0.95 and statistically insignificant, suggesting that minority outsiders weaken the negative relation between firm performance and CEO turnover but not significantly so. Model 8 reports results using the forced turnover cases. The negative relation between firm performance and forced turnover is larger, as expected, with a coefficient of −1.64, whilst the coefficient on the interaction variable is again insignificantly positive with a value of 2.81. Our results indicate that board ethnic diversity is not associated with stronger monitoring in terms of higher CEO replacement–performance sensitivity.

Model 9 reports the determinants of M&A returns. The coefficient for fraction minority is −0.002, which is statistically and economically insignificant, implying that increasing fraction minority by 0.1 decreases M&A returns by an economically small 0.02%. We conclude that board ethnic diversity is not associated with acquisition quality. With regard to other controls, returns are higher when the method of payment is all cash and lower when the target is public, the method of payment is all stock, the acquisition is diversifying and as acquisition relative size increases, consistent with prior studies (e.g. Fahlenbrach, Low and Stulz, 2010).

In summary, our results suggest that the presence of minority directors is not associated with stronger board monitoring across any one of our monitoring outcomes, and we therefore reject H1.

Firm performance

Table 4 reports OLS results for the determinants of profitability and Tobin's Q. Model 1 shows that the association between fraction minority and profitability is insignificant, both economically and statistically. The coefficient of 0.002 indicates that increasing fraction minority by 0.1 increases profitability by just 0.0002. Model 3 reports a similar pattern for Tobin's Q, the statistically insignificant coefficient of 0.158 implying that increasing fraction minority by 0.1 would increase Tobin's Q by just 0.0158. Our findings are consistent with those of Carter *et al.* (2010), but inconsistent with those of Carter, Simkins and Simpson (2003) and Miller and Triana (2009), who document a significantly positive relation.

The findings for controls are broadly consistent with previous studies. The coefficient for the proportion of female directors is insignificantly negative (positive) in the profitability (Tobin's Q) regression, whilst firms with higher performance are larger, have fewer business segments and a lower proportion of independent directors.

Models 2 and 4 test whether the relation between board ethnic diversity and firm performance is moderated by governance strength, as proxied by the E-index. We find no evidence of this. Whilst the coefficient on the E-index is significantly negative, consistent with Bebchuk, Cohen and Ferrell (2009), the coefficient on the interaction term (fraction minority interacted with the E-index) in both regressions is economically and statistically

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Table 4. Regressions of firm performance on board ethnic diversity

Dependent variable	Profitability (1)	Profitability (2)	Tobin's Q (3)	Tobin's Q (4)
Fraction minority	0.002	0.007	0.158	0.108
	(0.012)	(0.025)	(0.186)	(0.481)
Fraction female	−0.014	0.007	0.116	0.181
	(0.015)	(0.018)	(0.260)	(0.303)
Board size	0.000	0.000	−0.028***	−0.034***
	(0.001)	(0.001)	(0.010)	(0.012)
Fraction independent	−0.021***	−0.023**	−0.594***	−0.429**
	(0.008)	(0.010)	(0.173)	(0.212)
Firm size	0.003**	0.004**	0.037*	0.030
	(0.001)	(0.002)	(0.022)	(0.024)
# Business segments	−0.003***	−0.004***	−0.105***	−0.120***
	(0.001)	(0.001)	(0.016)	(0.018)
E-Index		−0.002*		−0.089***
		(0.001)		(0.026)
E-Index * Fraction minority		0.001		0.023
		(0.008)		(0.128)
N	9,638	4,033	9,636	4,032
Adjusted R^2	0.1135	0.1453	0.2374	0.2701

The models are estimated using OLS. All models include industry dummies (two-digit SIC) and year dummies based on financial year ends. Firm variables are measured at the prior financial year end, whilst board variables are measured at the annual shareholders meeting that takes place within the current financial year. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustering at the firm level.

*, **, *** Significance at the 90%, 95%, 99% level of confidence, respectively.

insignificant. We conclude that board ethnic diversity does not improve performance in firms with weak governance. This is inconsistent with board ethnic diversity providing stronger monitoring, and we thus reject H2.

Director appointment returns

Table 5 reports OLS analysis on the stock price reaction to the announcement of outside director appointments. Model 1 shows that the coefficient for minority status is 0.001, which is statistically insignificant and of small economic magnitude, implying that appointing a minority outside director increases appointment returns by 0.1% compared with a Caucasian outside director. Thus, appointment returns do not differ materially between minority and Caucasian directors.

Model 2 includes the E-index and its interaction with minority status, to test for a moderation effect of corporate governance strength. The coefficient for the interaction term is −0.001, thus opposite in sign to that expected under H2, as well as economically and statistically insignificant. Thus there is no evidence that the stock market perceives minority director appointments to create more value at weakly governed firms.

Robustness tests

In this section we describe additional tests conducted to ensure the robustness of our key conclusion that there is no evidence of board ethnic diversity improving either monitoring outcomes or firm performance for firms with higher agency costs. These results are tabulated in the Supplementary Appendix.

Omitted time-variant variables. We include additional controls for potential differences between boards with minority outside directors and those without, including outside director board averages for tenure, age, number of other directorships, number of foreign directors, number of retired directors and number of executive directors (in other firms). The results (Supplementary Appendix Tables A1 and A2) show that the coefficient for fraction minority is economically smaller and statistically insignificant in the CEO compensation regression, and therefore not robust to these additional controls. The other results are consistent with Tables 3 and 4, and our conclusions unchanged.[12]

[12]Previous studies have documented a negative impact of foreign directors on performance and monitoring

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Table 5. Regressions of director appointment returns on minority status

Dependent variable	Appointment returns (1)	Appointment returns (2)
Minority	0.000	0.001
	(0.002)	(0.006)
Independent	0.002	0.000
	(0.004)	(0.007)
Female	0.002	−0.001
	(0.002)	(0.002)
Age	0.000	0.000
	(0.000)	(0.000)
# Other directorships	−0.001*	−0.002
	(0.001)	(0.001)
Foreign	0.007*	0.002
	(0.003)	(0.004)
Retired	0.000	0.000
	(0.003)	(0.004)
Executive	−0.001	−0.002
	(0.003)	(0.003)
Finance	0.003	0.004
	(0.003)	(0.004)
Consulting	−0.002	−0.001
	(0.004)	(0.004)
Academic	−0.001	0.001
	(0.003)	(0.005)
Legal	−0.006*	−0.005
	(0.004)	(0.005)
Non-profit	−0.014**	−0.010
	(0.007)	(0.010)
Board size	0.000	0.001
	(0.000)	(0.001)
Fraction independent	−0.007	0.005
	(0.008)	(0.012)
Firm size	0.000	0.000
	(0.001)	(0.001)
# Business segments	0.000	0.000
	(0.001)	(0.001)
Profitability	−0.013	−0.032
	(0.018)	(0.027)
Tobin's Q	0.001	0.001
	(0.001)	(0.002)
E-Index		0.000
		(0.001)
E-Index * Minority		−0.001
		(0.002)
N	2,397	1,176
Adjusted R^2	0.0503	0.0808

The models are estimated using OLS. Both models include industry dummies (two-digit SIC) and year dummies based on announcement year. Individual director variables are measured at the next annual meeting date subsequent to the appointment. Board variables are measured at the annual meeting date prior to the appointment. Firm variables are measured at the financial year end prior to the appointment. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustering at the firm level.
*, **, *** Significance at the 90%, 95%, 99% level of confidence, respectively.

outcomes (Frijns, Dodd and Cimerova, 2016; Masulis, Wang and Xie, 2012). However, board ethnic diversity and national diversity are empirically distinct: the correlation between the fraction of ethnic minority directors (being an ethnic minority director) and the fraction of foreign directors (being a foreign director) is just 0.065 (0.089). One explanation for the difference in our findings from the above studies is that national cultural differences

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Omitted time-invariant firm effects. We employ firm fixed effects to control for unobservable time-invariant firm effects (Supplementary Appendix Tables A3 and A4). It is important to note that fraction minority exhibits low within-firm variance and thus introducing firm fixed effects could bias our results in favour of a finding of no significance on fraction minority. The coefficient on fraction minority loses significance in the CEO compensation regression, suggesting the significant correlation reported in Table 3 could be due to firm fixed effects (or low power of the test). For the CEO incentive pay regression, the coefficient for fraction minority is negative and statistically significant at the 10% level. However, the coefficient for fraction minority on compensation committee is positive and insignificant, which is inconsistent with minority directors causing lower CEO incentive pay. Other results are unchanged.

Another way to address unobservable time-invariant firm effects is difference-in-difference analysis (Chen *et al.*, 2016; Francis, Hasan and Wu, 2015). We include a dummy variable set equal to one for firms that have a minority outside director at some point over the sample period (firms with a minority), zero otherwise. We include another dummy variable set equal to one for firm year observations in which there is a minority outside director (post-minority), zero otherwise. The coefficient on post-minority measures the effect of a minority outside director appointment after controlling for the time-invariant characteristics of firms that make such appointments (firms with a minority). We create analogous variables for the compensation and audit committee. Supplementary Appendix Tables A5 and A6 show, using this approach, that the appointment of a minority outside director does not significantly impact any of our outcome variables.

Reverse causality. We control for reverse causality using instrumental variable analysis. Studies show board composition to be impacted by local availability of directors (Knyazeva, Knyazeva and Masulis, 2013). We therefore instrument the fraction minority variable with the proportion of ethnic minorities in the firm's headquarter county population (fraction HQ minority) (Anderson *et al.*, 2011). Firm headquarter data is from Compustat and county demographics from US Census annual intercensal estimates.[13] We consider it theoretically unlikely that board monitoring outcomes or firm performance would be determined by this instrument, and thus it should meet the exclusion condition. We are also confident that it meets the relevance condition, since it loads significantly positively on fraction minority and the Kleibergen–Paap Wald F-statistic is sufficiently larger than the value of 10 proposed by Stock, Yogo and Wright (2002). The instrument does not, however, have predictive strength for fraction minority on compensation committee or fraction minority on audit committee, and thus we do not instrument these variables. For the models (CEO turnover and firm performance) which interact fraction minority with moderator variables, we instrument these interaction terms using the interaction of fraction HQ minority and the moderator variable as an additional instrument (Knyazeva, Knyazeva and Masulis, 2013). We use a probit maximum likelihood model for the accounting misstatement and CEO turnover regressions. First-stage results are reported in Supplementary Appendix Table A7, second-stage results in Supplementary Appendix Tables A8 and A9.

For the OLS (probit) regressions, the Hausman (Wald) test informs us whether the variable fraction minority is exogenous to the outcome measure (i.e. whether there is a systematic difference between the OLS and 2SLS estimates) and thus whether reverse causality is a concern. For the CEO compensation model, the Hausman test is 5.12 with a p-value of 0.02 whilst the coefficient for fraction minority is significantly positive and thus robust to controlling for reverse causality. However, as shown above, this finding is not robust to including other controls or firm fixed effects. In the other 2SLS regressions the Hausman and Wald tests are statistically insignificant, and we therefore do not reject the null hypothesis that fraction minority is exogenous to these outcomes. Given that, in finite samples, the 2SLS results have low statistical power and are biased and inconsistent, our OLS results are more accurate in these cases (see e.g. Schwartz-Ziv, 2017).

are larger than within-country ethnic cultural differences (Minkov and Hofstede, 2012).

[13]The census data provides a breakdown of county population according to race (White, Black, American Indian or Alaska Native, Asian or Pacific Islander) and ethnicity (Hispanic or Latino).

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Dynamic endogeneity. Reverse causality may, however, be dynamic. We control for the possibility that ethnic diversity is determined by past monitoring strength or firm performance by employing the Arellano–Bond (1991) one-step regression, which includes the lagged dependent variable and is estimated with instruments of the two-period (and earlier) lagged dependent variable along with one-period lagged values of other control variables. As with firm fixed effects, this test will typically have low statistical power compared with OLS. Supplementary Appendix Tables A10 and A11 show that the only difference from the main results is that fraction minority on compensation committee significantly positively impacts CEO compensation level and incentive pay, which is an ambiguous finding in terms of monitoring strength, and that fraction minority has a significantly negative impact on Tobin's Q.

Sample selection. In constructing our sample, we were unable to identify the ethnicity of all board directors for a substantial proportion of firm year observations [11,699 of 23,911 (49%)], and subsequently excluded these observations, raising the possibility that our results are unrepresentative. Our coverage increases significantly over time, from 14% in 1996 to 95% in 2011. To check the generalizability of our results, we restrict the analysis to years 2007–2011, for which the coverage is 71%. This period is also advantageous because it includes the 2007–2009 financial crisis, during which time boards took on additional importance (e.g. Francis, Hasan and Wu, 2012) and strong monitoring directors created value (Francis, Hasan and Wu, 2015). If minority directors are stronger monitors, then the effect should be more visible during this period. The results (Supplementary Appendix Tables A12 and A13) are, however, broadly consistent with those for the main sample.

Alternatively, the impact of ethnic board diversity on monitoring may be expected to be stronger where the CEO is Caucasian rather than a minority. Of the 8,278 observations for which we identify the CEO on ExecuComp, we identify the ethnicity for 8,123 observations. Of these, 372 firm year observations (4.6%) are ethnic minority CEOs. We repeat our analysis (Tables 3–5) for the 7,751 observations of Caucasian CEOs. The results (Supplementary Appendix Tables A14–A16) are similar to those for the overall sample and our conclusions are unchanged.

Measurement of independent variable. It is possible that our results are sensitive to how we measure minority director presence. At low representation, minorities may suffer from token behaviour and be marginalized (Kanter, 1977), not having an impact until their number is sufficiently large. We therefore alternatively employ a dummy variable that equals one if there are at least two minority directors on the board, zero otherwise. The analysis using this approach (Supplementary Appendix Tables A17 and A18) shows our key findings to be unchanged. Thus, the neutral effect does not appear to be due to minorities representing a small proportion of outside directors, since if so, we would expect to find stronger effects for these tests – especially those for the compensation and audit committees, which are smaller in size than the board.

Alternatively, board ethnic diversity may be measured by the number of different ethnic minority groups present. We therefore alternatively employ a variable that equals zero if no minorities are present, one, two or three if one, two or three minority groups are represented, respectively. The analysis using this approach (Supplementary Appendix Tables A19 and A20) does not change our findings.

Finally, we split minority directors into African American, Asian and Hispanic. Previous studies show that African American directors are more likely to come from a working/middle-class background than Caucasian, Asian and Hispanic directors (Zweigenhaft and Domhoff, 2008), whilst their history of slavery, segregation and civil rights may render them more of an out-group (and hence more independent) than Asians and Hispanics. We re-estimate our analysis, replacing fraction minority with the proportion of African American (fraction African American), Asian (fraction Asian) and Hispanic (fraction Hispanic) outside directors. The results (Supplementary Appendix Tables A21 and A22), however, show no consistent and significant effect associated with any specific ethnic group.

Direct measures of monitoring. Our analysis has focused on board monitoring outcomes, but it is also possible that ethnic minority directors are associated with direct measures of monitoring, such as the number of board meetings and attendance at board meetings. We obtain data on the number of board meetings in a fiscal year from ExecuComp. Board attendance data is from the IRRC,

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which reports whether each outside director misses at least 25% of board meetings, which we average across all outside directors for each firm year. We regress these measures on fraction minority and other control variables. The results (Supplementary Appendix Table A23) show no significant relation.

Appointment returns. Finally, we test the robustness of our appointment announcement return findings in two ways. First, 753 of the 2,940 appointment dates include multiple director appointments. We rerun our analysis on the 2,187 appointment dates which contain a single appointment announcement. The results (reported in columns 1 and 2 of Supplementary Appendix Table A24) are consistent with those in Table 5, showing no significant effect of minority status on appointment returns. Second, we examine the share price return at the appointment of the first ethnic minority director. The results (reported in columns 3 and 4 of Supplementary Appendix Table A24) show that the coefficient on minority remains economically and statistically insignificant.

Conclusion

The effect of board ethnic diversity on firm performance has been examined by a number of studies. The important distinctive feature of our study is our focus on whether ethnic diversity impacts the monitoring role of the board, on which we provide the first empirical evidence. Regulators, investors and diversity advocates have argued that ethnic diversity may strengthen board monitoring. Our theoretical framework suggested that whilst monitoring could be strengthened, it could also be unaffected or weakened by ethnic diversity.

Our first hypothesis, that ethnic diversity strengthens board monitoring outcomes, is rejected. We examine a range of board monitoring outcomes including CEO compensation, accounting restatements, CEO turnover–performance sensitivity and M&A performance. In the case of compensation and accounting outcomes, we consider ethnic diversity on the compensation and audit committees, respectively. However, we fail to find any evidence that diversity is associated with stronger monitoring outcomes. If minority directors were stronger monitors, we would expect them to improve firm performance for firms with weak corporate governance or agency costs. However, our second hypothesis, that the relation between ethnic diversity and firm performance is moderated by the strength of corporate governance, is rejected.

We are reasonably confident that lack of statistical power is not the explanation for our lack of findings. We employ the largest sample to date and widely employed model specifications, reducing concerns about low statistical power due to sample size (and low degrees of freedom) or model misspecification. We also pay careful attention to endogeneity issues, employing fixed effect, instrumental variable and Arellano–Bond (1991) estimators. Whilst these models typically have low power, the results are consistent with our main results and thus reinforce our finding of no impact. Our primary contribution to the board diversity literature is that we fail to find evidence that ethnic diversity is associated with board monitoring.

An important limitation of our work is that we do not disentangle the alternative explanations for the lack of impact. For example, it may be caused by board selection procedures that only select minority directors who are very similar in outlook to Caucasian directors. Instead, however, it could be due to positive effects cancelling out negative ones. For example, minority directors may be more independent or of higher quality, but the positive effect on monitoring is cancelled out by these directors being given a board role related to their ethnicity and thus taking their focus away from monitoring. Our analysis does not reveal which forces are at work, each of which has different implications, and thus our interpretation is limited. However, as the first study to examine this topic (and hence the need to rigorously examine a range of monitoring outcomes), this limitation is perhaps unavoidable and shared with similar studies on board gender diversity (e.g. Sila, Gonzalez and Hegendorff, 2016). We hope that future research will uncover which channels are at work by examining the theorized positive and negative effects of ethnic diversity. Additionally, future research should examine the behaviour and role of minority directors, such as board engagement, committee membership and leadership. Any difference from Caucasian directors may reflect strength of individual monitoring, but also discrimination or experience. Distinguishing amongst these factors will provide us with a better understanding of the monitoring role of minority directors.

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Our second contribution to the board diversity literature is the finding that ethnic diversity is not associated with firm performance. Whilst our empirical setting is the USA, our results may generalize to (and have relevance for) similar institutional settings, such as the UK. They are also relevant to the policy debate on board quotas. Our findings do not support the 'business' or 'commercial' case for increasing board ethnic diversity, which posits that for the average firm, performance will improve. Thus, our findings do not support one of the key arguments used to support the introduction of a board ethnic diversity quota, such as that recommended by the Parker review (Parker, 2017) in the UK. If there are financial benefits, these are not significant enough to show up in overall firm performance or value. Consequently, proponents of increased board ethnic diversity would more credibly make the case on non-financial grounds, such as fairness, equal opportunity and the signalling of commitment to an inclusive corporate culture.

Appendix A: Identification of minority directors

We correct two types of inaccuracy in the unique codes assigned by IRRC to each director. Firstly, of the 34,938 unique IRRC codes we identify 869 directors who have more than one unique code and 1,209 unique codes for which there is more than one director. We identify individual directors using director name, firm CUSIP and director date of birth. This results in 32,612 unique directors over 1996–2011, of whom 1,680 are identified as minorities, 18,215 as Caucasian and 12,717 of unknown race. Secondly, there are inaccuracies with the IRRC identification of race. For example, 343 of the 1,680 directors have an inconsistent ethnic classification over time. We therefore manually check the ethnicity of all 1,680 directors. First, we employ the following lists of minority board directors:

African Americans

- Zweigenhaft and Domhoff (2011)
- Executive Leadership Council (2004, 2008)
- http://www.blackenterprise.com/mag/power-in-the-boardroom/
- http://www.blackenterprise.com/be-lists/the-100-most-powerful-executives-in-corporate-america/4/
- http://www.blackentrepreneurprofile.com/fortune-500-ceos/
- http://www.thefreelibrary.com/America's+most+powerful+Black+executives%3A+B.E.+selects+40+all-stars . . . -a013506897
- http://savoynetwork.com/category/the-list/

Asians

- Zweigenhaft and Domhoff (2011)
- Committee of 100 (2004, 2007)
- Leadership Education for Asian Pacifics (2011)
- http://www.china4us.com/SinoCEO.htm
- http://www.88yp.com/Executives.htm

Hispanics

- Zweigenhaft and Domhoff (2011)
- Hispanic Business, Inc. (2002, 2004, 2005)
- Hispanic Association on Corporate Responsibility (2007)
- http://www.hispanicbusiness.com/branded/2013/elite/boardroom_elite_bios.asp
- http://www.hispanicbusiness.com/2009/1/28/2009_boardroom_elite_complete_list.htm

We confirm the ethnicity of 684 directors using these lists, 371 using online biographies, 178 using online photos and 451 using names (clear Hispanic or Asian name consistent with IRRC classification of either minority). 62 of the 1,075 are concluded to be Caucasian using online biographies and online photos. For the 13 remaining directors we are unable to verify their ethnicity and therefore accept the IRRC classification. This process results in 19,933 directors of confirmed ethnic background, consisting of 18,235 Caucasian and 1,698 minority directors, the latter consisting of 682 African American, 616 Asian, 398 Hispanic and 2 Native American directors. We backfill the ethnic classification of directors for earlier IRRC years for which ethnicity is not reported. Out of a total 234,858 person-firm year observations, ethnicity is established for 194,800.

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Appendix B: Variable definitions

Variable	Definition
(A) Board characteristics	
CEO compensation	Natural logarithm of CEO total annual executive compensation (item TDC1) in thousands of 2011 US dollars.
CEO incentive pay	Annual value of restricted stock (item STOCK_AWARDS_FV) and option grants (item OPTION_AWARDS_FV) scaled by total annual compensation (item TDC1).[a]
CEO turnover	Dummy variable: 1 if CEO leaves post in the next fiscal year, 0 otherwise. Turnover cases described by ExecuComp as 'deceased' are excluded.
CEO forced turnover	Dummy variable: 1 if CEO is forced out of post in the next fiscal year, 0 otherwise. We employ the dataset of Peters and Wagner (2014) and Jenter and Kanaan (2015), for which forced turnovers are defined as follows: (1) press reports state the CEO was fired, forced out, or retires or resigns due to policy differences or pressure; (2) CEO is less than 60 years old and the press do not report the reason to be death, health or acceptance of another position, or press reports the CEO is retiring but the company does not announce this at least six months in advance.
Fraction minority	Ethnic minority outside directors divided by total outside directors.
Fraction minority on compensation committee	Ethnic minority outside directors on compensation committee divided by number of directors on compensation committee.
Fraction minority on audit committee	Ethnic minority outside directors on audit committee divided by number of directors on audit committee.
Fraction female	Proportion of female directors to board size.
Board size	Number of directors on board.
Fraction independent	Proportion of independent directors to board size.
CEO tenure	Number of years that the CEO has held the CEO position for.
CEO-chairman	Dummy variable: 1 if the CEO is also the chairman, 0 otherwise.
CEO age	Age of the CEO.
(B) Firm characteristics	
Accounting misstatement	Dummy variable: 1 for firm years in which there is an accounting misstatement, 0 otherwise.
Profitability	Net income before extraordinary items and discontinued operations (item 18) scaled by total assets (item 6).
Tobin's Q	Market value of equity minus book value of equity plus total assets scaled by total assets [(item 25 * item 24 – item 60 + item 6) / item 6].
Firm size	Log of sales (item 12), in millions of 2011 US dollars.
# Business segments	Number of business segments.
Volatility	Standard deviation of monthly stock returns for the fiscal year.
Stock performance	Stock return for the fiscal year.
E-index	The entrenchment index is the sum of six provisions (staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, supermajority requirements for mergers, charter amendments), with a higher value indicating weaker governance.
Fraction HQ minority	Proportion of non-white and Hispanic inhabitants of the county in which the firm is headquartered.
(C) Merger and acquisition characteristics	
M&A returns	Cumulative abnormal returns (CARs) measured over the 3-day window (−1, 1) around announcement, using a market model approach.
Diversifying	Dummy variable: 1 if the primary two-digit SIC codes of the acquirer and the target are different, 0 otherwise.
Public target	Dummy variable: 1 if target firm is publicly held, 0 otherwise.
All-cash	Dummy variable: 1 if deal is purely cash financed, 0 otherwise.
All-stock	Dummy variable: 1 if deal is purely stock financed, 0 otherwise.
Hostile	Dummy variable: 1 if deal is reported as hostile, 0 otherwise.
Competing	Dummy variable: 1 if there is a competing bidder, 0 otherwise.
Cross-border	Dummy variable: 1 if target firm is not a US company, 0 otherwise.
Relative size	Deal value over market value of acquirer at last fiscal year end.

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Variable	Definition
(D) Director appointment characteristics	
Appointment returns	Cumulative abnormal returns (CARs) measured over the 3-day window (−1, 1) around announcement, using a market model approach.
Minority	Dummy variable: 1 for ethnic minority outside directors, 0 otherwise.
Independent	Dummy variable: 1 for independent outside directors, 0 otherwise.
Female	Dummy variable: 1 for female outside directors, 0 otherwise.
Age	Age of the director.
# Other directorships	Number of other directorships that the director holds.
Foreign	Dummy variable: 1 if the director's country of employment is overseas, 0 otherwise.
Retired	Dummy variable: 1 if the director is retired, 0 otherwise.
Executive	Dummy variable: 1 if the director is an executive of another company, 0 otherwise.
Finance	Dummy variable: 1 if the director works in the finance industry, 0 otherwise.
Consulting	Dummy variable: 1 if the director works in the consulting industry, 0 otherwise.
Academic	Dummy variable: 1 if the director is an academic, 0 otherwise.
Legal	Dummy variable: 1 if the director works in the legal industry, 0 otherwise.
Non-profit	Dummy variable: 1 if the director works in the non-profit industry, 0 otherwise.
Other	Dummy variable: 1 if the director works in another occupation not listed above, 0 otherwise.

[a]Due to a reporting change in 2006, prior to 2006 our two measures are constructed with different ExecuComp items for stock and option grants (items RSTKGRNT and OPTION_AWARDS_BLK_VALUE), other pay (items OTHANN and ALLOTHTOT) and non-equity incentives (item LTIP).

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

Table A1. Regressions of monitoring outcomes on board ethnic diversity with additional controls for outside director characteristics.
Table A2. Regressions of firm performance on board ethnic diversity with additional controls for outside director characteristics.
Table A3. Regressions of monitoring outcomes on board ethnic diversity with firm fixed effects.
Table A4. Regressions of firm performance on board ethnic diversity with firm fixed effects.
Table A5. Regressions of monitoring outcomes on board ethnic diversity: Difference-in-difference analysis.
Table A6. Regressions of firm performance on board ethnic diversity: difference-in-difference analysis.

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